Inspection Report For Well: UT20736 - 07119

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: 10/10/2013
Others: Ajayi, Christopher — Time: 12:50 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevinson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 28-05		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 8/1/2007		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SWNW S28 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	1705 /
Last MIT:	Pass 8/16/2013	***Annulus Pressure From Last MIT:***	1020

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: (Select One)
☐ Construction / Workover ☐ Response to Complaint ☐ Other
☐ Plugging ☒ Routine
☐ Post-Closure ☐ Witness MIT

ICIS Entered
Date 12/27/13
Initials DB

OBSERVED VALUES:

Tubing Gauge:	☒ Yes ☐ No	Pressure: U: 1277 / L: ____ psig	Gauge Range: Scada psig	Gauge Owner:	☐ EPA ☒ Operator
Annulus Gauge:	☒ Yes ☐ No	Pressure: 0 psig	Gauge Range: opened psig	Gauge Owner:	☒ EPA ☐ Operator
Bradenhead Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator
Pump Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator

Operating Status: (Select One)
☐ Active ☒ Not Injecting ☐ Plugged and Abandoned
☐ Being Reworked ☐ Production ☐ Under Construction

See page 2 for photos, comments, and site conditions.

U2 Entered
Date 12/17/13
Initial AR

Inspection Report For Well: UT20736 - 07119 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating, Inc.

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

OMB No. 2040-0042 Approval Expires 11/30/2014

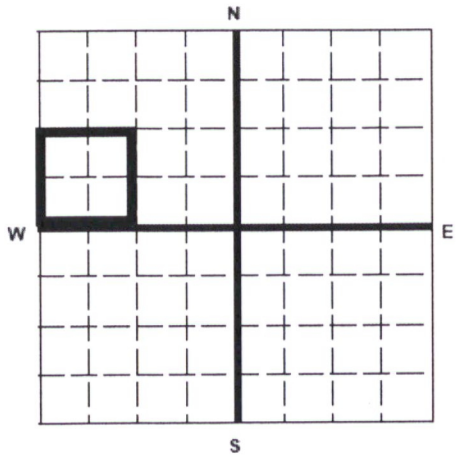
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT20736-07119

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of NW 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2583 ft. frm (N/S) N Line of quarter section
and 712 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-05

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	1587	1615	4250		0	0
February	16	1607	1644	4172		0	0
March	16	1633	1656	4594		0	0
April	16	1617	1649	3946		0	0
May	16	1626	1662	4398		0	0
June	16	1634	1675	4252		0	0
July	16	1614	1626	4437		0	0
August	16	1632	1636	4504		0	0
September	16	1617	1631	4095		0	0
October	16	1624	1646	4599		0	0
November	16	1580	1611	3923		0	0
December	16	1601	1615	4461		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		03/21/2017

EPA Form 7520-11 (Rev. 12-11)

U2 Entered
Date 4/3/17
Initial DB

GREEN BLUE CBL
TAB 2

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem
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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 28-05 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345322**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	**1/26/2017**
System Temperature 1 (°F):	**300**
System Pressure 1 (psig):	**2000**
System Temperature 2 (°F):	**130**
System Pressure 2 (psig):	**50**
Calculated Density (g/ml):	**0.9984**
pH:	**7.20**
Calculated TDS (mg/L):	**1457.40**
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	**99.00**
H_2S in Gas (%):	
H2S in Water (mg/L):	**10.00**
Tot. SuspendedSolids(mg/L):	
Corrosivity(LangliерSat.Indx)	**0.00**
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	**0.00**	Chloride (Cl):	**32.00**
Potassium (K):	**3.12**	Sulfate (SO_4):	**100.00**
Magnesium (Mg):	**24.89**	Bicarbonate (HCO_3):	**854.00**
Calcium (Ca):	**49.38**	Carbonate (CO_3):	
Strontium (Sr):	**0.81**	Hydroxide(HO):	
Barium (Ba):	**2.03**	Acetic Acid (CH_3COO)	
Iron (Fe):	**272.86**	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	**109.05**	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	**0.20**	Isobutyric Acid (($CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	**0.42**	Bromine (Br):	
Aluminum (Al):	**0.18**	Silica (SiO_2):	**8.64**
Lithium (Li):	**2.66**	Calcium Carbonate ($CaCO_3$):	
Boron (B):	**0.47**	Phosphates (PO_4):	**14.35**
Silicon (Si):	**4.04**	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.48	21.72	1.07	1.10	4.37	9.26	3.29	195.21	0.00	0.00	0.00	0.00	0.00	0.00	11.62	10.26
149.00	267.00	0.56	24.44	0.98	1.08	4.35	9.26	3.41	195.92	0.00	0.00	0.00	0.00	0.00	0.00	11.40	10.26
168.00	483.00	0.69	28.22	0.91	1.06	4.39	9.26	3.57	196.63	0.00	0.00	0.00	0.00	0.00	0.00	11.25	10.26
187.00	700.00	0.83	31.63	0.86	1.04	4.46	9.26	3.72	197.14	0.00	0.00	0.00	0.00	0.00	0.00	11.12	10.26
206.00	917.00	0.98	34.56	0.82	1.03	4.55	9.26	3.87	197.51	0.00	0.00	0.00	0.00	0.00	0.00	11.03	10.26
224.00	1133.00	1.13	36.95	0.81	1.02	4.66	9.26	4.02	197.77	0.00	0.00	0.00	0.00	0.00	0.00	10.95	10.26
243.00	1350.00	1.30	38.81	0.80	1.02	4.78	9.26	4.16	197.95	0.00	0.00	0.00	0.00	0.00	0.00	10.90	10.26
262.00	1567.00	1.47	40.19	0.81	1.02	4.92	9.26	4.30	198.08	0.00	0.00	0.00	0.00	0.00	0.00	10.86	10.26
281.00	1783.00	1.65	41.19	0.83	1.03	5.07	9.26	4.44	198.17	0.00	0.00	0.00	0.00	0.00	0.00	10.84	10.26
300.00	2000.00	1.83	41.88	0.86	1.04	5.23	9.26	4.57	198.24	0.00	0.00	0.00	0.00	0.00	0.00	10.83	10.26

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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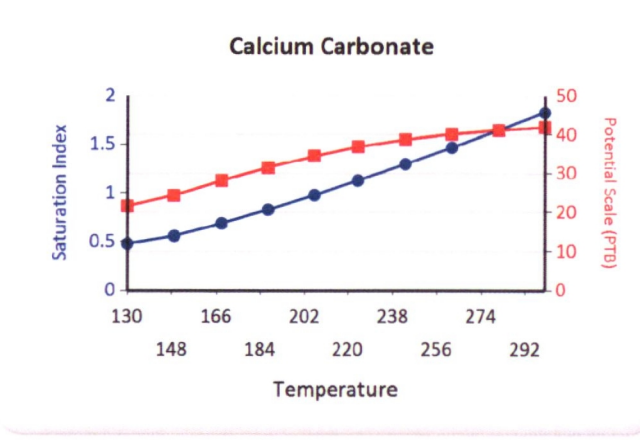
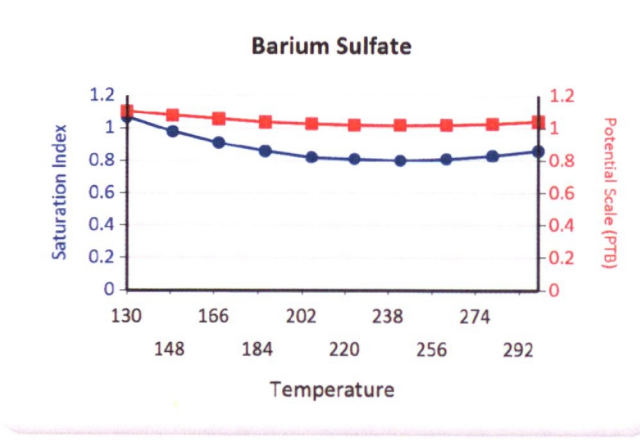
Water Analysis Report

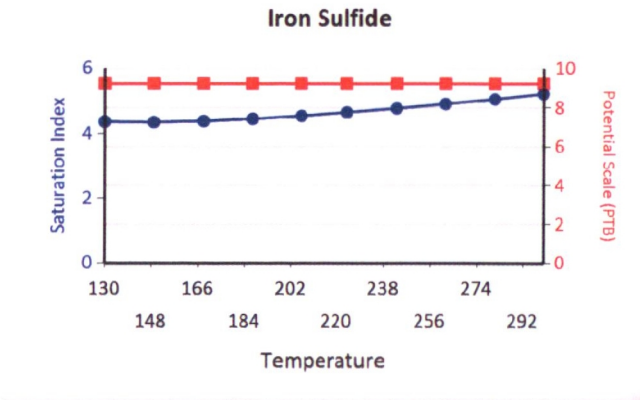
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65	72.84	10.60	0.08	0.00	0.00	0.00	0.00	8.18	20.04
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.88	73.04	10.20	0.08	0.00	0.00	0.00	0.00	8.77	20.04
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	3.13	73.16	9.89	0.08	0.00	0.00	0.00	0.00	9.60	20.04
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	3.36	73.23	9.62	0.08	0.17	1.49	0.00	0.00	10.45	20.04
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	3.58	73.27	9.38	0.08	1.24	9.75	0.00	0.00	11.31	20.04
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	3.79	73.29	9.19	0.08	2.31	15.96	0.37	2.78	12.19	20.05
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	3.98	73.30	9.02	0.08	3.37	19.73	1.02	6.49	13.08	20.05
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	4.16	73.31	8.88	0.08	4.42	21.48	1.67	8.89	13.97	20.05
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	4.32	73.31	8.76	0.08	5.45	22.12	2.31	10.26	14.86	20.05
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	4.47	73.31	8.66	0.08	6.46	22.32	2.94	10.98	15.73	20.05

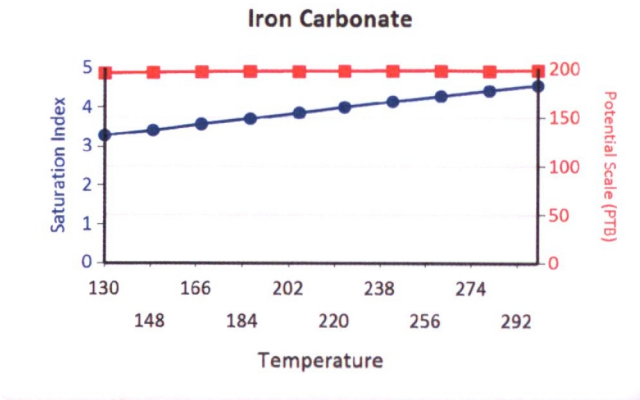
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate









Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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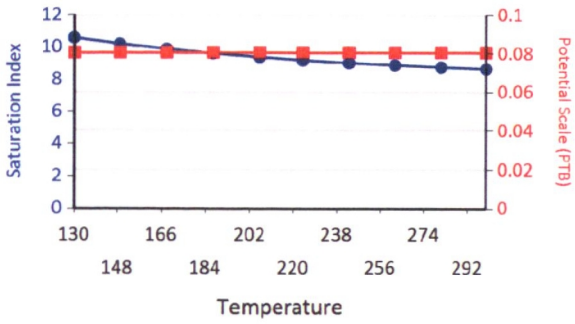
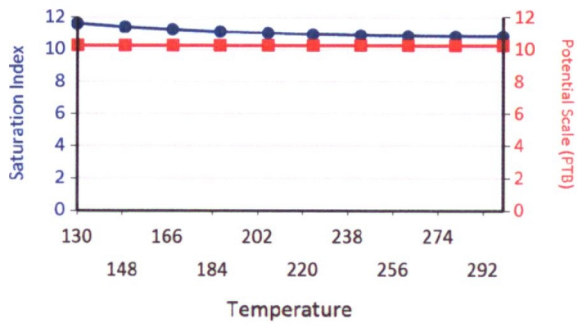
Water Analysis Report

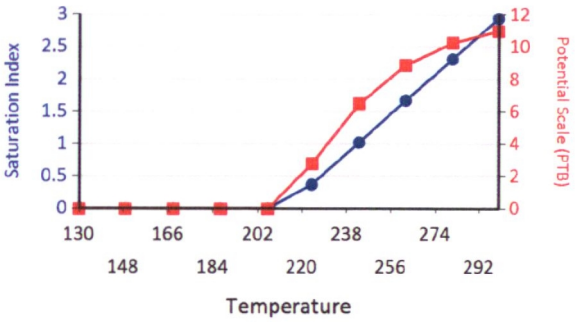
Lead Sulfide



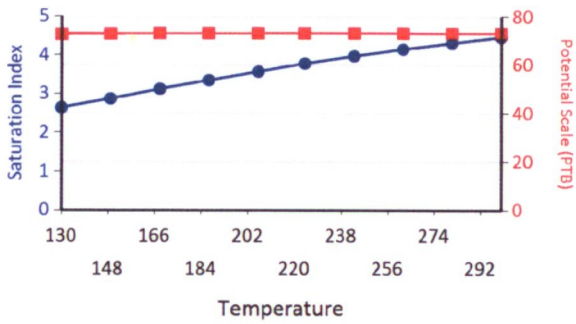
Zinc Sulfide



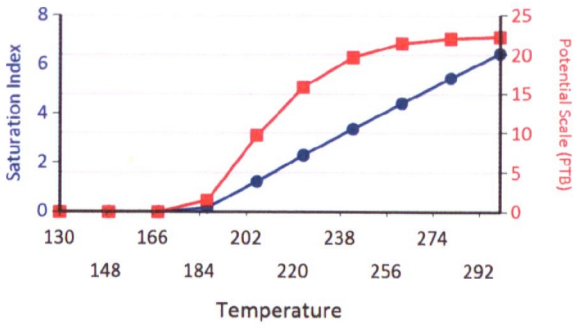
Ca Mg Silicate



Zinc Carbonate



Mg Silicate



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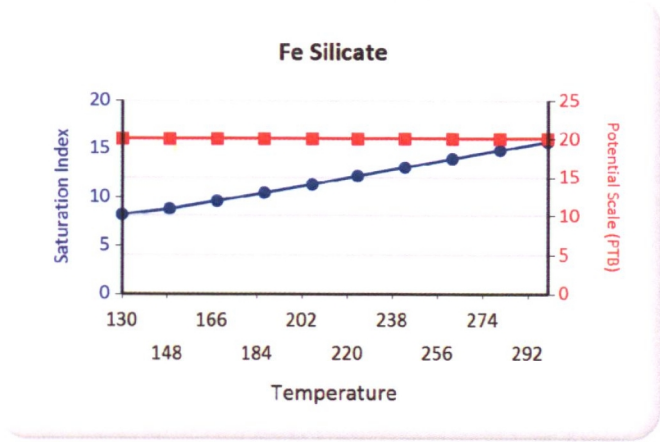


OMB No. 2040-0042 Approval Expires 11/30/2014

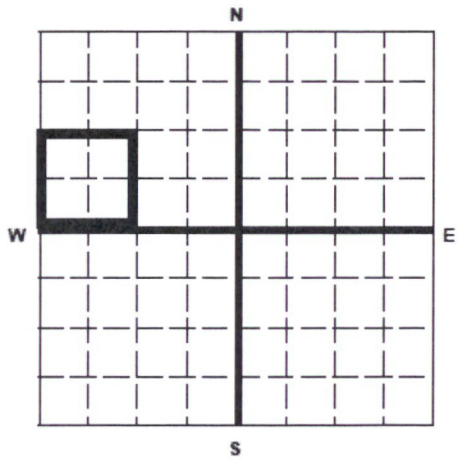
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-~~04434~~ 07119

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of NW 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2583 ft. frm (N/S) N Line of quarter section
and 712 ft. from (E/W) W Line of quarter section.

U2 Entered
Date 3/2/16
Initial BJ

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-05

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1596	1608	2436		0	0
February	15	1624	1645	2388		0	0
March	15	1570	1655	2270		0	0
April	15	1555	1606	3215		0	0
May	15	1646	1665	3089		0	0
June	15	1646	1666	2863		0	0
July	15	1626	1642	3412		0	0
August	15	1620	1668	4062		0	0
September	15	1635	1649	4011		0	0
October	15	1636	1636	4311		0	0
November	15	1617	1660	4217		0	0
December	15	1630	1639	4634		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

EPA Form 7520-11 (Rev. 12-11)

TAB 2

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 28-05 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327658**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	**1/13/2016**
System Temperature 1 (°F):	**60**
System Pressure 1 (psig):	**2000**
System Temperature 2 (°F):	**180**
System Pressure 2 (psig):	**50**
Calculated Density (g/ml):	**1.0024**
pH:	**6.80**
Calculated TDS (mg/L):	**7177.73**
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	**40.00**
H_2S in Gas (%):	
H2S in Water (mg/L):	**0.00**
Tot. SuspendedSolids(mg/L):	
Corrosivity(LangliерSat.Indx)	**0.00**
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	**2250.88**	Chloride (Cl):	**3000.00**
Potassium (K):	**3.98**	Sulfate (SO_4):	**530.00**
Magnesium (Mg):	**78.41**	Bicarbonate (HCO_3):	**1098.00**
Calcium (Ca):	**179.08**	Carbonate (CO_3):	
Strontium (Sr):	**5.45**	Acetic Acid (CH_3COO)	
Barium (Ba):	**1.78**	Propionic Acid (C_2H_5COO)	
Iron (Fe):	**1.63**	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	**1.05**	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	**0.70**	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	**0.07**	Silica (SiO_2):	**26.70**
Aluminum (Al):	**0.11**	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	**0.65**	Phosphates (PO_4):	**3.33**
Boron (B):	**0.31**	Oxygen (O_2):	
Silicon (Si):	**12.48**		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.82	88.65	1.09	0.97	0.00	0.00	0.93	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	0.65	73.04	1.11	0.98	0.00	0.00	0.74	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	0.54	62.39	1.14	0.98	0.00	0.00	0.61	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	0.44	51.65	1.18	0.99	0.00	0.00	0.47	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.34	40.98	1.23	1.00	0.00	0.00	0.34	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.25	30.57	1.29	1.01	0.00	0.00	0.21	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.17	20.55	1.37	1.02	0.00	0.00	0.08	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.09	11.09	1.46	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.02	2.31	1.56	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.00	0.00	1.69	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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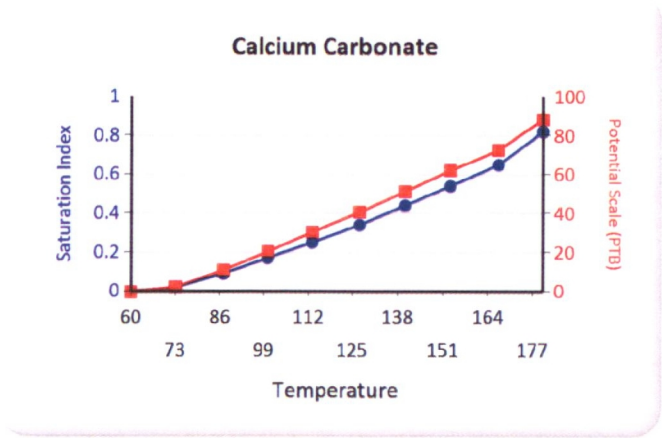
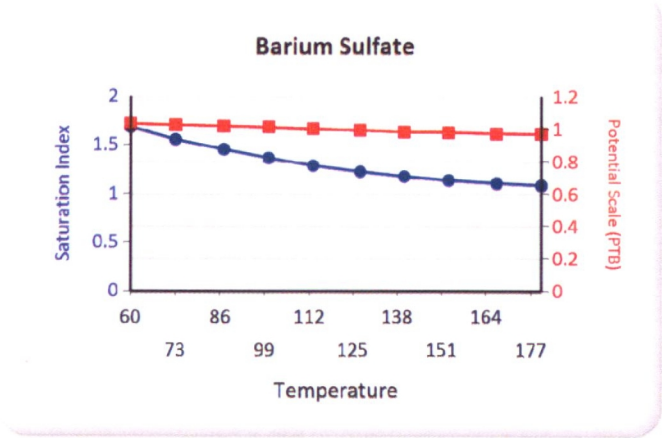
Water Analysis Report

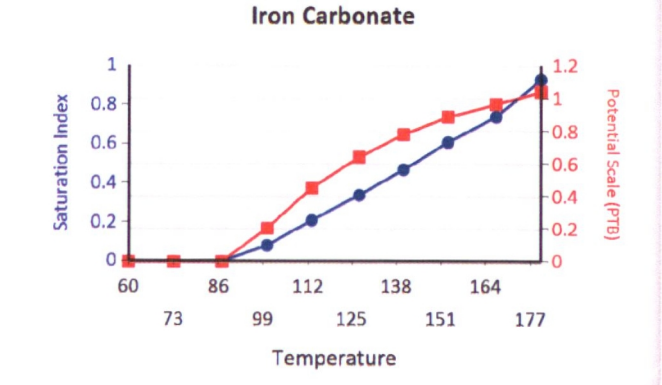
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.56	0.00	0.00	0.00	0.00	0.00	0.00	1.97	0.98
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.66
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.26
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

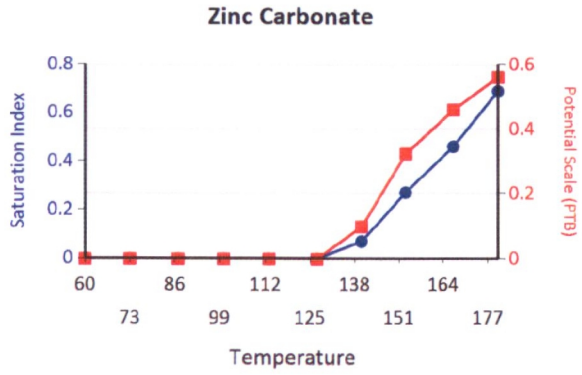
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Fe Silicate

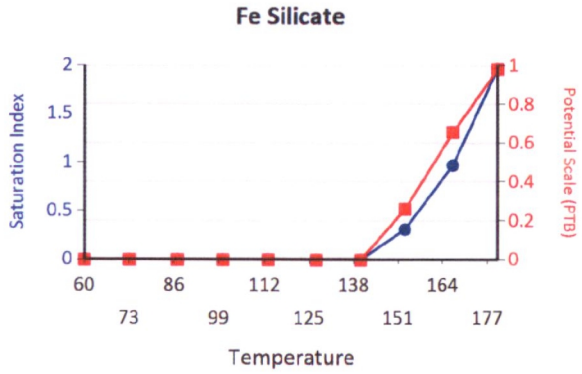
These scales have positive scaling potential under final temperature and pressure: Barium Sulfate








Zinc Carbonate
Saturation Index
Potential Scale (PTB)
0.8
0.6
0.4
0.2
0
0.6
0.4
0.2
0
60
73
86
99
112
125
138
151
164
177
Temperature


Fe Silicate
Saturation Index
Potential Scale (PTB)
2
1.5
1
0.5
0
1
0.8
0.6
0.4
0.2
0
60
73
86
99
112
125
138
151
164
177
Temperature

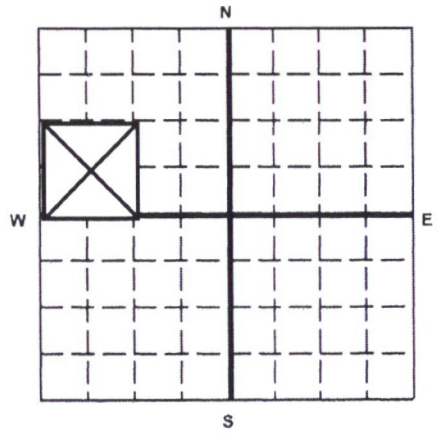
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT20736-07119

Surface Location Description

___ 1/4 of ___ 1/4 of SW 1/4 of NW 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2583 ft. frm (N/S) N Line of quarter section and 712 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-05

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1483	1549	2960		0	0
February	14	1604	1636	3435		0	0
March	14	1605	1637	3715		0	0
April	14	1627	1663	3109		0	0
May	14	1641	1656	2872		0	0
June	14	1582	1656	2111		0	0
July	14	1584	1662	2537		0	0
August	14	1645	1665	2517		0	0
September	14	1612	1641	2299		0	0
October	14	1652	1647	2619		0	0
November	14	1661	1666	2578		0	0
December	14	1659	1668	2764		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/31/15
Initial GW

TAB	GREEN	BLUE	CBI
		2	

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH OPERATING CO INC - EBUS**
Well Name: **UTE TRIBAL 28-05 INJ, DUCHESNE**
Sample Point: **WELLHEAD**
Sample Date: **1/7/2015**
Sample ID: **WA-297527**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0050
pH:	8.50
Calculated TDS (mg/L):	11595.34
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	30.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3451.17	Chloride (Cl):	5000.00
Potassium (K):	60.06	Sulfate (SO_4):	209.00
Magnesium (Mg):	11.28	Bicarbonate (HCO_3):	2806.00
Calcium (Ca):	20.80	Carbonate (CO_3):	
Strontium (Sr):	4.90	Acetic Acid (CH_3COO)	
Barium (Ba):	1.91	Propionic Acid (C_2H_5COO)	
Iron (Fe):	0.61	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	1.62	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.10	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.07	Silica (SiO_2):	27.82

Notes:
B=7.86 Al=.04 Li=1.55

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	1.42	17.33	1.21	1.07	3.65	0.34	1.82	0.44	0.00	0.00	0.00	0.00	0.00	0.00	12.10	0.84
88.00	157.00	1.43	17.33	1.13	1.05	3.57	0.34	1.86	0.44	0.00	0.00	0.00	0.00	0.00	0.00	11.91	0.84
97.00	300.00	1.44	17.35	1.05	1.04	3.50	0.34	1.90	0.44	0.00	0.00	0.00	0.00	0.00	0.00	11.74	0.84
106.00	443.00	1.45	17.38	0.98	1.02	3.45	0.34	1.94	0.44	0.00	0.00	0.00	0.00	0.00	0.00	11.59	0.84
115.00	585.00	1.47	17.42	0.92	1.00	3.40	0.34	1.98	0.44	0.00	0.00	0.00	0.00	0.00	0.00	11.44	0.84
124.00	728.00	1.49	17.45	0.86	0.98	3.36	0.34	2.02	0.44	0.00	0.00	0.00	0.00	0.00	0.00	11.30	0.84
133.00	871.00	1.51	17.49	0.80	0.96	3.33	0.34	2.06	0.44	0.00	0.00	0.00	0.00	0.00	0.00	11.17	0.84
142.00	1014.00	1.53	17.53	0.75	0.94	3.30	0.34	2.10	0.44	0.00	0.00	0.00	0.00	0.00	0.00	11.05	0.84
151.00	1157.00	1.55	17.56	0.71	0.91	3.28	0.34	2.14	0.44	0.00	0.00	0.00	0.00	0.00	0.00	10.94	0.84
160.00	1300.00	1.58	17.60	0.67	0.89	3.27	0.34	2.18	0.44	0.00	0.00	0.00	0.00	0.00	0.00	10.83	0.84

		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43	1.05	13.16	0.04	1.25	8.67	0.41	3.99	6.40	0.47
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	1.06	12.86	0.04	1.54	10.18	0.56	5.02	6.53	0.47
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.66	1.07	12.59	0.04	1.90	11.96	0.74	6.35	6.72	0.47
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77	1.07	12.33	0.04	2.26	13.60	0.93	7.64	6.92	0.47
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	1.88	1.08	12.09	0.04	2.63	15.08	1.13	8.86	7.14	0.47
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	1.08	11.86	0.04	3.00	16.40	1.33	10.02	7.36	0.47
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	1.08	11.64	0.04	3.38	17.56	1.53	11.09	7.59	0.47
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17	1.08	11.44	0.04	3.75	18.56	1.73	12.08	7.82	0.47
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26	1.08	11.24	0.04	4.13	19.40	1.94	12.97	8.06	0.47
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	1.08	11.06	0.04	4.50	20.09	2.15	13.77	8.31	0.47

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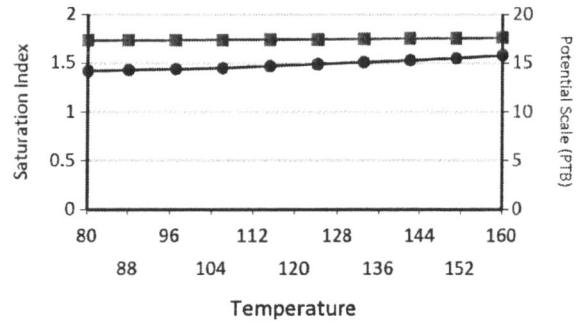
Water Analysis Report

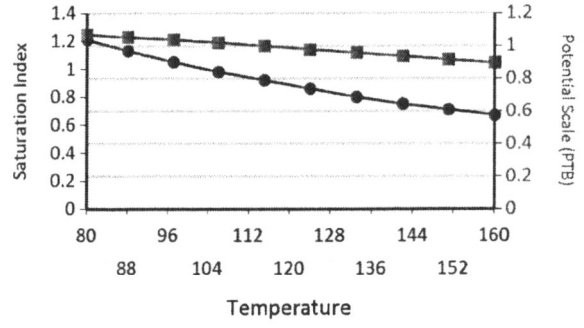
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

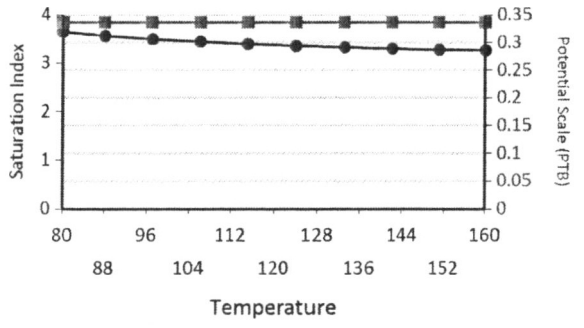
Calcium Carbonate



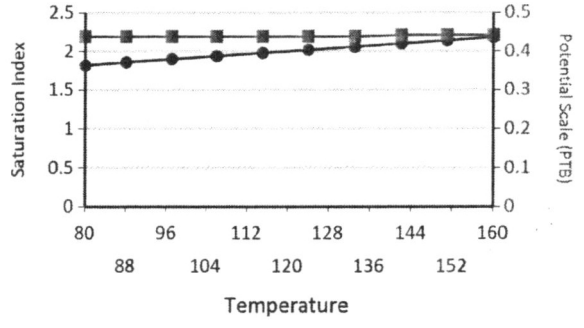
Barium Sulfate



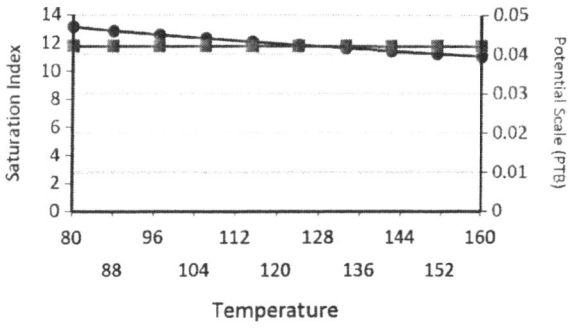
Iron Sulfide



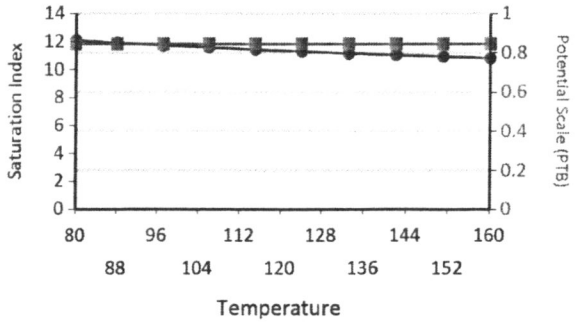
Iron Carbonate



Lead Sulfide



Zinc Sulfide



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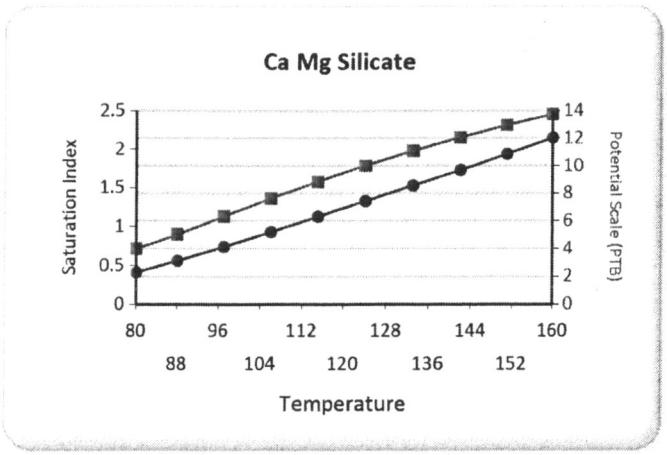
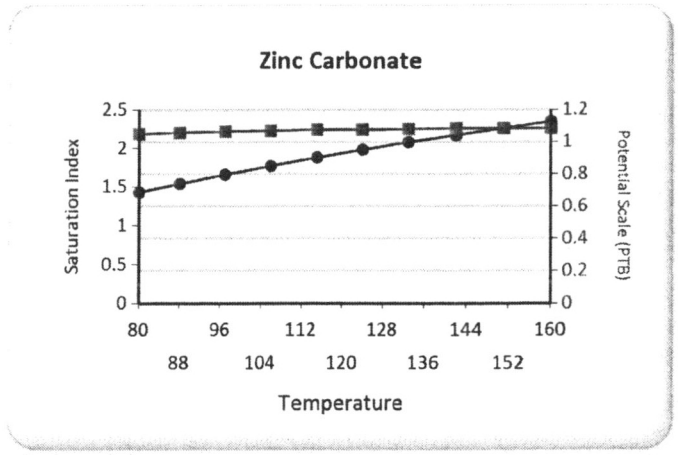
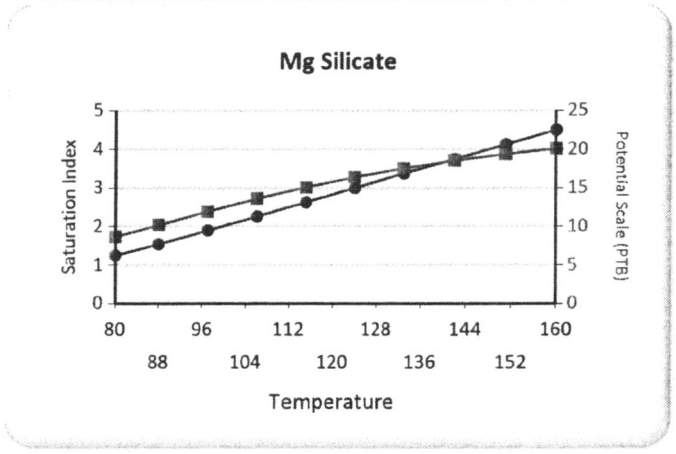
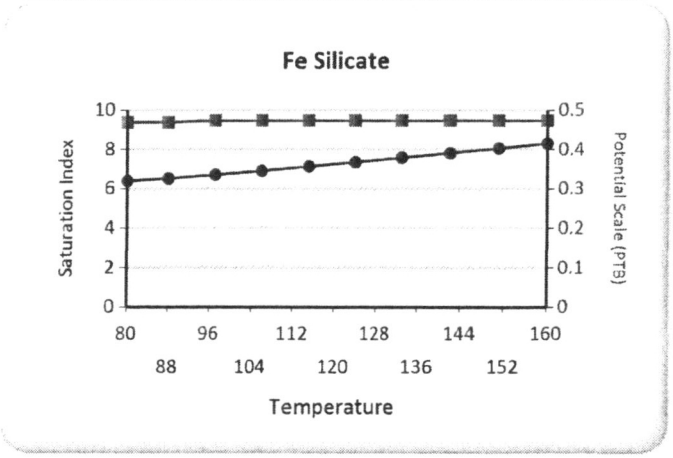








OMB No. 2040-0042 Approval Expires 12/31/2011

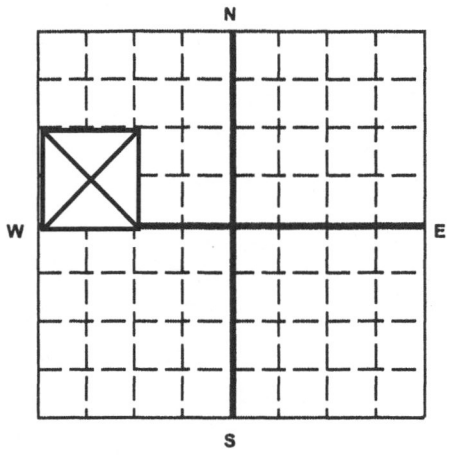
EPA

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT20736-07119

Surface Location Description

____ 1/4 of ____ 1/4 of SW 1/4 of NW 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2583 ft. frm (N/S) N Line of quarter section and 712 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- ☐ Brine Disposal
- ☒ Enhanced Recovery
- ☐ Hydrocarbon Storage

TYPE OF PERMIT
- ☐ Individual
- ☒ Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-05

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1313	1389	440		0	120
February	13	1422	1586	1354		0	100
March	13	1615	1628	2003		0	90
April	13	1642	1649	2082		0	90
May	13	1652	1669	2230		0	50
June	13	1624	1642	1572		0	0
July	13	1374	1605	1199		0	0
August	13	463	577	0		0	1140
September	13	924	1255	2555		0	0
October	13	1571	1612	4771		0	80
November	13	1596	1610	3642		0	90
December	13	1439	1618	2217		0	80

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/11/2014

EPA Form 7520-11 (Rev. 12-08)

CBI

2

U2 Entered
Date 3/24/14
Initial DS

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 28-05 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262995**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.002
pH:	7.00
Calculated TDS (mg/L):	6211.67
CO2 in Gas (%):	
Dissolved CO2 (mg/L)):	0.00
H2S in Gas (%):	
H2S in Water (mg/L):	1.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2212.41	Chloride (Cl):	3000.00
Potassium (K):	13.00	Sulfate (SO_4):	169.00
Magnesium (Mg):	22.00	Bicarbonate (HCO_3):	732.00
Calcium (Ca):	26.00	Carbonate (CO_3):	
Strontium (Sr):	1.90	Acetic Acid (CH_3COO)	
Barium (Ba):	0.28	Propionic Acid (C_2H_5COO)	
Iron (Fe):	11.00	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.27	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.27	Silica (SiO_2):	23.54

Notes:
B=1.7 Al=0 Li=.34

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.71	0.13	1.71	0.91	0.79	6.54	0.00	0.00	0.00	0.00	0.00	0.00	8.56	0.14
73.00	157.00	0.00	0.00	0.56	0.12	1.55	0.90	0.83	6.65	0.00	0.00	0.00	0.00	0.00	0.00	8.24	0.14
86.00	300.00	0.00	0.00	0.43	0.11	1.50	0.89	0.93	6.93	0.00	0.00	0.00	0.00	0.00	0.00	8.03	0.14
100.00	443.00	0.00	0.00	0.32	0.09	1.47	0.89	1.03	7.14	0.00	0.00	0.00	0.00	0.00	0.00	7.84	0.14
113.00	585.00	0.00	0.00	0.22	0.07	1.45	0.89	1.13	7.32	0.00	0.00	0.00	0.00	0.00	0.00	7.67	0.14
126.00	728.00	0.00	0.00	0.14	0.05	1.45	0.89	1.23	7.46	0.00	0.00	0.00	0.00	0.00	0.00	7.53	0.14
140.00	871.00	0.00	0.00	0.07	0.02	1.46	0.89	1.33	7.57	0.00	0.00	0.00	0.00	0.00	0.00	7.40	0.14
153.00	1014.00	0.00	0.00	0.01	0.00	1.49	0.89	1.44	7.66	0.00	0.00	0.00	0.00	0.00	0.00	7.28	0.14
166.00	1157.00	0.00	0.00	0.00	0.00	1.53	0.90	1.54	7.73	0.00	0.00	0.00	0.00	0.00	0.00	7.18	0.14
180.00	1300.00	0.00	0.00	0.00	0.00	1.58	0.90	1.63	7.78	0.00	0.00	0.00	0.00	0.00	0.00	7.09	0.14

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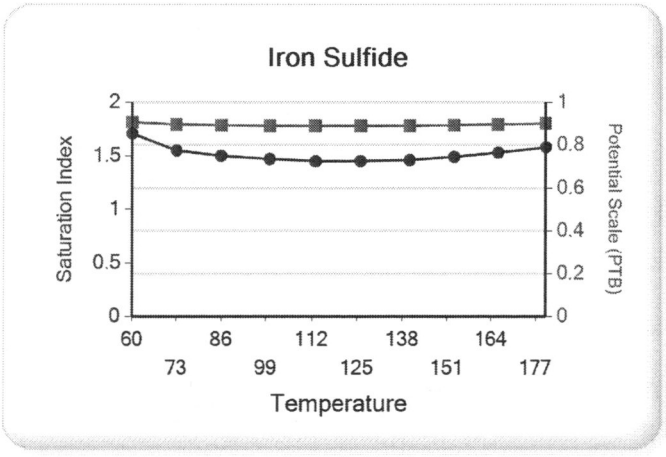
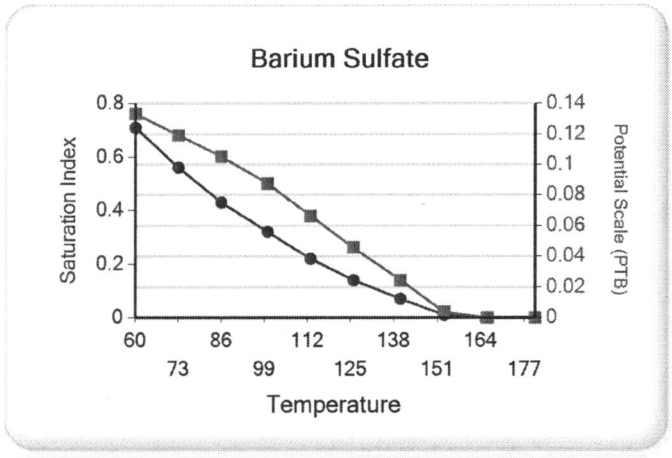
Water Analysis Report

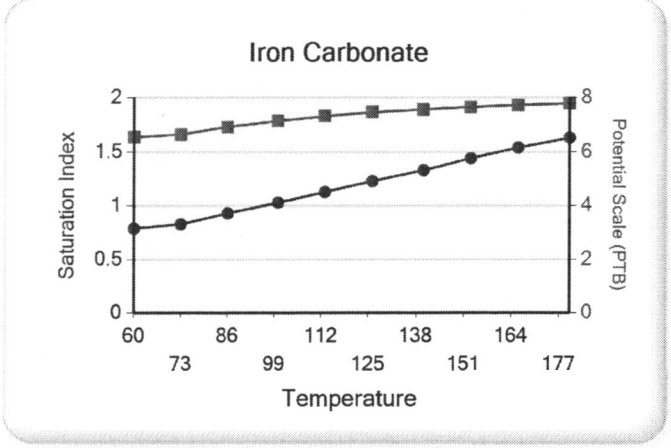
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	1.72
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	3.31
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	4.69
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05	5.81
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.63	6.68
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23	7.31
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.84	7.75
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	4.47	8.04

These scales have positive scaling potential under initial temperature and pressure: Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide

These scales have positive scaling potential under final temperature and pressure: Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Fe Silicate







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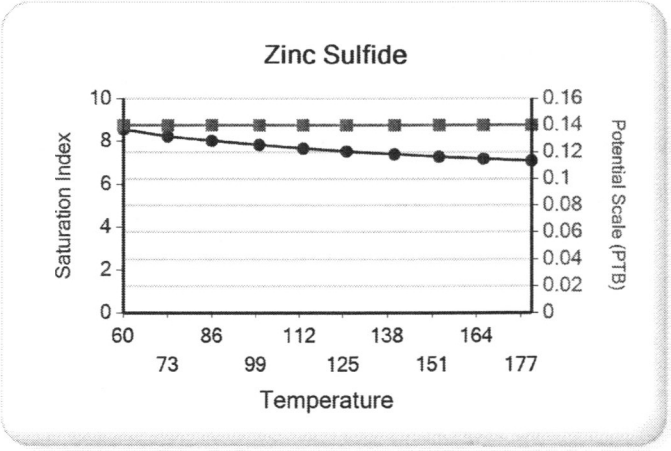
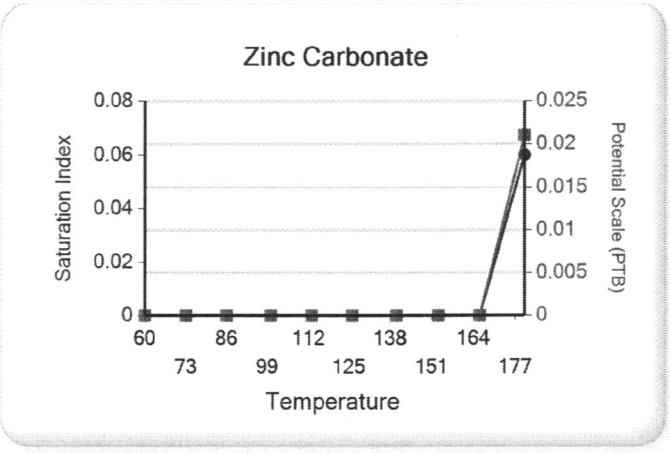
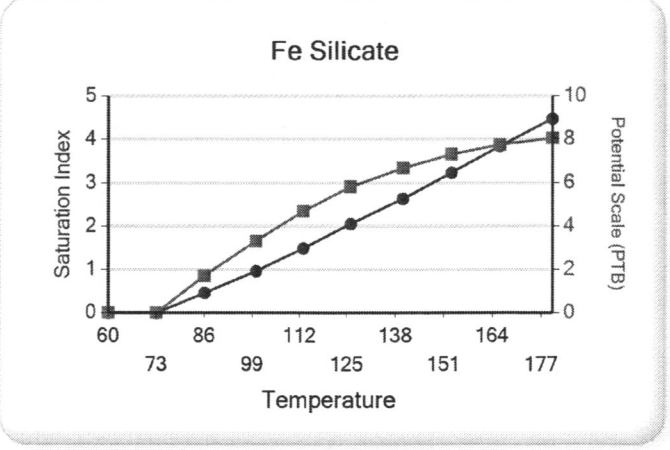
Water Analysis Report







Petroglyph Operating Company, Inc.
Annulus Pressure Cause and Mitigation Measures
2013 EPA Annual Injection Report

Well Name: Ute Tribal 28-05

UIC Permit Number: UT2736-07119

API Number: 43-013-30802

Cause of Pressure and Mitigation Measures:
During the month of August this well's Injection Packer was released in order to retrieve a survey tool stuck in the injection tubing. The well's exiting perforations were also re-perforated and acidized. The well passed an MIT in August and was returned to injection. The pressure reported in August was associated with the MIT.
Other instances of annulus pressure reported are due to formation temperature. The pressure is relieved but often returns.

PETROGLYPH

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
1420H623517

6. If Indian, Allottee or Tribe Name
UINTAH AND OURAY

7. If Unit or CA/Agreement, Name and/or No.
1420H624650

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
UTE TRIBAL 28-05

2. Name of Operator
PETROGLYPH OPERATING CO INC
Contact: RODRIGO JURADO
E-Mail: rjurado@pgei.com

9. API Well No.
43-013-30802-00-S1

3a. Address
PO BOX 607
ROOSEVELT, UT 84066

3b. Phone No. (include area code)
Ph: 435-722-5302

10. Field and Pool, or Exploratory
ANTELOPE CREEK

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 28 T5S R3W SWNW 2583FNL 712FWL

11. County or Parish, and State
DUCHESNE COUNTY, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

On 8/5/2013 Petroglyph Operating rigged upon the well referenced above to retrieve a survey tool taht became stuck in the injection tubing. After previously failed attempts to retrieve the tool, we released the injection packer, pulled the injection tubing and found the tool at approx 3045'. We also found a serious scale problem and determined that the well would benefit from an acid wash treatment and a re-perforation of the formation. In order to proceed with our plan of action we first isolated and pressure tested previously squeezed perforations at 3975' and found no problems. We then circulated acid and cleaned the tubing, then ran a bit and scraper to 5683' anc cleaned and circulated the wellbore. We re-perforated 4998-5002, 5056-69, 5081-83, 5290-96, 5314-17, 5320-24 & 5408-12. We added the following perforations to previous perf heights: 4713-17, 4796-4802, 4889-91, 5008-10, 5086-90, 5424-26 & 5429-31. We then treated the well using 1000 gal of 15% Hcl with additives from 4600'-5667. Acid was recovered back out the tubing and we laid down a total of 117 joints of injection tubing. We then ran in hole with new injection tubing and a new Arrowset 1

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #217783 verified by the BLM Well Information System
For PETROGLYPH OPERATING CO INC, sent to the Vernal
Committed to AFMSS for processing by LESLIE BUHLER on 08/27/2013 (13LBB0760SE)

Name *(Printed/Typed)* RODRIGO JURADO — Title GENERAL CONTACT

Signature (Electronic Submission) — Date 08/21/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ACCEPTED — (BLM Approver Not Specified) Title — Date 09/05/201

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Vernal

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional data for EC transaction #217783 that would not fit on the form

32. Additional remarks, continued

Packer, presure tested tubing to 2000 psi and performen and MIT on the casing to 1000 psi with no loss.
Acid: 1000 gal 15% HCL W/ WAI-251 LC Acid Corrosion Inhibitor, WNE-341N NE Agent, WIC-641L Iron Control Agent, WIC 644L Iron Control Agent, 55 gal M 8172 Iron Demulsifer & M8300 Mutual Solvent.
Perf Guns: Titan 3-1/8" Containing 22.7 gram charges, 0.42" EHD, 23.54" TTp @ 4 SPF @ 120* Phased.

Petroglyph Energy, Inc.
960 Broadway Ave., Ste. 500
BOISE, ID 83706
(208) 685-7600

WellWork AFE Chronological Regulatory Report

Well Name : UTE TRIBAL 28-05 INJ					
Prospect:	ANTELOPE CREEK			AFE #:	42882
Sec/Twp/Rge:	28 / 5S / 3W			Operator:	PETROGLYPH
API #:	43013308020000	Field:	ANTELOPE CREEK	Supervisor:	Leon & Alex
Work Type:	Workover	County , St.:	DUCHESNE, UT	Phone:	
Production Current/Expected	Oil: 0 / 0	Gas:	0 / 0	Water:	0 / 0

Wellwork Details

Date : 8/5/2013	Activity: POOH	Rig Name:	Days : 1

Daily Report Summary :

Daily Report Detail:

Remarks
Travel
"MIRU, Change to 2 3/8"" ND Well Head, NU BOP and RU Flr. Work and release Pkr"
Pooh w/ plugged tbg and found tools in jt # 93 @ approx 3040'. Lay down tools. TOP 1900'ft plumb full of scale, samples caught. Finish Pooh and lay down pkr.
"RIH w/ tbg collar, 1 jt, Psn and tbg. Rattle tbg w/ hammer trying to clean out some scale. To 4800'ft. unload 36 jts of 2 3/8"" tbg from UT: 20-02 SWIFN"
Travel

From 6:00 To 7:00	1 hrs	Category/Rmks:	Travel : Travel
From 7:00 To 11:30	4.5 hrs	Category/Rmks:	MIRU : MIRU, Change to 2 3/8" ND Well Head, NU BOP and RU Flr. Work and release Pkr
From 11:30 To 14:30	3 hrs	Category/Rmks:	POOH : Pooh w/ plugged tbg and found tools in jt # 93 @ approx 3040'. Lay down tools. TOP 1900'ft plumb full of scale, samples caught. Finish Pooh and lay down pkr.
From 14:30 To 17:00	2.5 hrs	Category/Rmks:	RIH : RIH w/ tbg collar, 1 jt, Psn and tbg. Rattle tbg w/ hammer trying to clean out some scale. To 4800'ft. unload 36 jts of 2 3/8" tbg from UT: 20-02 SWIFN
From 17:00 To 18:00	1 hrs	Category/Rmks:	Travel : Travel

Date : 8/6/2013	Activity: Circulate	Rig Name:	Days : 2

Daily Report Summary :

Daily Report Detail:

Remarks
Travel
PU Tbg as needed w/ EOT 5640 Try Work sand line and Knuckle joint through tbg to open up tbg Got down through new tbg but could not get down through old tbg
Pooh w/ good tbg to used tbg.
Pump down tbg trying to work bars and Knuckle jt to open up tbg(Heavy trash, Samples take and sent to Multi-chem)
Travel

From 6:00 To 7:00	1 hrs	Category/Rmks:	Travel : Travel
From 7:00 To 10:00	3 hrs	Category/Rmks:	PU tbg : PU Tbg as needed w/ EOT 5640 Try Work sand line and Knuckle joint through tbg to open up tbg Got down through new tbg but could not get down through old tbg
From 10:00 To 11:00	1 hrs	Category/Rmks:	POOH : Pooh w/ good tbg to used tbg.
From 11:00 To 17:00	6 hrs	Category/Rmks:	Circulate : Pump down tbg trying to work bars and Knuckle jt to open up tbg(Heavy trash, Samples take and sent to Multi-chem
From 17:00 To 18:00	1 hrs	Category/Rmks:	Travel : Travel

Well Name : UTE TRIBAL 28-05 INJ					
Prospect:	ANTELOPE CREEK			AFE #:	42882
Sec/Twp/Rge:	28 / 5S / 3W			Operator:	PETROGLYPH
API #:	43013308020000	Field:	ANTELOPE CREEK	Supervisor:	Leon & Alex
Work Type:	Workover	County , St.:	DUCHESNE, UT	Phone:	
Production Current/Expected	Oil: 0 / 0	Gas: 0 / 0		Water: 0 / 0	

Date : 8/7/2013	Activity: Acidize	Rig Name:	Days : 3
Daily Report Summary :			
Daily Report Detail:	Remarks Travel Wait on acid, perform acid wash to clear tubing. 3 swaps RU Prs and preform scana-log on tbg, 81 jts red band, 38 jts blue band, 31 yellow band. RD Prs SWIFN Travel		

From 6:00 To 7:00	1 hrs	Category/Rmks:	Travel : Travel
From 7:00 To 12:00	5 hrs	Category/Rmks:	Acidize : Wait on acid, perform acid wash to clear tubing. 3 swaps
From 12:00 To 17:00	5 hrs	Category/Rmks:	Log : RU Prs and preform scana-log on tbg, 81 jts red band, 38 jts blue band, 31 yellow band. RD Prs SWIFN
From 17:00 To 18:00	1 hrs	Category/Rmks:	Travel : Travel

Date : 8/8/2013	Activity: Run Bit & Scrapper	Rig Name:	Days : 4
Daily Report Summary :			
Daily Report Detail:	Remarks Travel "PU and MU 5 1/2"" scraper w/ 4 3/4"" bit and RIH w/ same. Work scraper through perfs and seen scale on weight indicator. Work scraper 3 times through perfs" Curculate Btms up @ 5683, could not get any deeper. New PBTD Pooh w/ bit and scraper and lay down same RIH w/ Arrow set 1 Pkr and set @ 4300'ft. set and test squeeze perfs @ 3975 to 1000psi w/ no pressure loss Release Pkr and Pooh w/ same Travel		

From 6:00 To 7:00	1 hrs	Category/Rmks:	Travel : Travel
From 7:00 To 12:00	5 hrs	Category/Rmks:	Run scraper : PU and MU 5 1/2" scraper w/ 4 3/4" bit and RIH w/ same. Work scraper through perfs and seen scale on weight indicator. Work scraper 3 times through perfs
From 12:00 To 13:00	1 hrs	Category/Rmks:	Circulate : Curculate Btms up @ 5683, could not get any deeper. New PBTD
From 13:00 To 14:30	1.5 hrs	Category/Rmks:	POOH : Pooh w/ bit and scraper and lay down same
From 14:30 To 16:00	1.5 hrs	Category/Rmks:	RIH : RIH w/ Arrow set 1 Pkr and set @ 4300'ft. set and test squeeze perfs @ 3975 to 1000psi w/ no pressure loss
From 16:00 To 17:30	1.5 hrs	Category/Rmks:	POOH : Release Pkr and Pooh w/ same
From 17:30 To 18:30	1 hrs	Category/Rmks:	Travel : Travel

Date : 8/9/2013	Activity: Perforate/Acidize	Rig Name:	Days : 5
Daily Report Summary :			
Daily Report Detail:	Remarks Travel RU Cased Hole and perforate as per design. @ 4 spf @ 120* phased. RD Cased Hole "RIH w/ 2 3/8"" tbg to 5667"" Perform Acid Wash stopping acid @ 4600' on back side, Made 3 washes and reverse out acid. Pooh w/ tbg and lay down tbg as needed. SWIFN Travel Acid wash: 1000 gal 15% Hcl w/ WAI-251LC acid corrision, WNE-341N NE agent, WIC-641L Iron Control agent, WIC-644L Iron Control agent, 55gal M8172 Iron demulsifer, M8300 Mutal solvent		

From 6:00 To 7:00	1 hrs	Category/Rmks:	Travel : Travel
From 7:00 To 11:30	4.5 hrs	Category/Rmks:	Perf & Acid : RU Cased Hole and perforate as per design. @ 4 spf @ 120* phased. RD Cased Hole
From 11:30 To 12:30	1 hrs	Category/Rmks:	RIH : RIH w/ 2 3/8" tbg to 5667'
From 12:30 To 15:30	3 hrs	Category/Rmks:	Acidize : Perform acid wash stopping acid @ 4600' on back side, Made 3 washes and reverse out acid.
From 15:30 To 17:00	1.5 hrs	Category/Rmks:	POOH : Pooh w/ tbg and lay down tbg as needed. SWIFN
From 17:00 To 18:00	1 hrs	Category/Rmks:	Travel : Travel

Well Name : UTE TRIBAL 28-05 INJ							
Prospect:	ANTELOPE CREEK					AFE #:	42882
Sec/Twp/Rge:	28 / 5S / 3W					Operator:	PETROGLYPH
API #:	43013308020000		Field:	ANTELOPE CREEK		Supervisor:	Leon & Alex
Work Type:	Workover		County , St.:	DUCHESNE, UT		Phone:	
Production Current/Expected	Oil:	0 / 0	Gas:	0 / 0		Water:	0 / 0

Date :	8/12/2013	Activity:	Run Packer	Rig Name:		Days :	8

Daily Report Summary :

Daily Report Detail:

Remarks
Travel
"PU and MU 5 1/2"" Arrow set 1 pkr, 2 3/8"" Psn, and 2 3/8"" tbg. RIH w/ same break and dope all connections"
Pump and circulate 110 bbls Pkr fluid @ 1.5 BPM down casing
ND Bop, and set Arrow set 1 pkr w/ 15K tension, NU well head
Preform MIT test to 1000psi on casing(squeeze perfs @ 3975) Test ok. Pump 30 bbls down tbg @ 1.75 BPM @ 2000psi to displace any possible acid in tbg
RDMOL Casing pressure still holding @ 1000psi

From 6:00 To 7:00	1 hrs	Category/Rmks:	Travel : Travel
From 7:00 To 12:30	5.5 hrs	Category/Rmks:	Run Packer : PU and MU 5 1/2" Arrow set 1 pkr, 2 3/8" Psn, and 2 3/8" tbg. RIH w/ same break and dope all connections
From 12:30 To 14:00	1.5 hrs	Category/Rmks:	Circulate : Pump and circulate 110 bbls Pkr fluid @ 1.5 BPM down casing
From 14:00 To 15:30	1.5 hrs	Category/Rmks:	NU : ND Bop, and set Arrow set 1 pkr w/ 15K tension, NU well head
From 15:30 To 16:00	0.5 hrs	Category/Rmks:	Test : Preform MIT test to 1000psi on casing(squeeze perfs @ 3975) Test ok. Pump 30 bbls down tbg @ 1.75 BPM @ 2000psi to displace any possible acid in tbg
From 16:00 To 17:00	1 hrs	Category/Rmks:	RDMOL : RDMOL Casing pressure still holding @ 1000psi

Casing

DateIn	Setting Depth	Jts Run	Type	Size	Weight	Grade	MINID	HoleDiam	TD
10/18/1983	390	10	3. Surface	8.625	24	J-55	0	12.25	390
Stage: 1, Lead, 0, 350, w/2% cacl,1/4/sks celloflake, Class G, 0, 0									
10/30/1983	6634	164	5. Production	5.5	17	J-55	0	7.625	6634
Stage: 1, Lead, 0, 224, pacesetter lite cmt WOCT., Class F, 0, 0									

August 21, 2013

EPA
ATTN: Don Breffle
Region 8
1595 Wyncoop Street
Denver, CO 80202-8917

UIC Permit #UT2736-07119
Well ID: Ute Tribal 28-05
Ute Tribal No. 28-05, Duchesne County, Utah

Dear Mr. Breffle,

Please find enclosed the successful MIT test on the above referenced well. This test was performed to provide proof of integrity after we released the injection packer on 8/5/2013 in order to retrieve a previously stuck survey tool.

After previous failed attempts to retrieve the tool failed, on 8/5/2013 we released the packer, pulled tubing, recovered survey tool and found the well would benefit from an acid wash treatment. We cleaned out the injection tubing and laid down 117 joints. We then pressure tested a previously squeezed set of perfs at 3975' with no loss. We then ran a bit and scraper to 5683' circulated and cleaned the well and re-perforated the following: 4998-5002, 5056-69, 5081-83, 5290-96, 5314-17, 5320-24 & 5408-12. We added the following to existing perforation heights: 4713-17, 4796-4802, 4889-91, 5008-10, 5086-90, 5424-26 & 5429-31. Perforations were shot at 4 shots per foot. We then treated the well with 1000 gal of 15% Hcl with additives from 4600-5667 and circulated the acid back up the tubing, ran in with new injection tubing and Arrowset 1 Packer and pressure tested the tubing to 2000 psi and performed an MIT on the casing to 1000 psi with no loss.

Please let us know if there is a need for further action on our part and we will immediately comply. My direct number is 435-722-5302 if you wish to contact us.

Sincerely,

Rodrigo Jurado
Regulatory Compliance Spc

Encl: MIT

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 8/16/13

Test conducted by: CHAD STEVENSON

Others present: _____

Well Name: 28-05 Type: ER SWD **Status: AC TA UC**
Field: ANTELOPE CREEK
Location: 28-05 Sec: ____ T ____ N / S R ____ E / W County: DUCHESNE State: UT
Operator: PETROGLYPH ENERGY
Last MIT: ____/____/____ **Maximum Allowable Pressure:** _____ **PSIG**

Regularly scheduled test? [ ] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [X] Yes [ ] No

Well injecting during test? If Yes, rate: _____ **bpd**
Pre-test annulus pressure: _____ **psig**

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING PRESSURE RECORD			
Initial Pressure	360 psig	psig	psig
End of test pressure	380 psig	psig	psig
CASING / TUBING ANNULUS PRESSURE RECORD			
0 minutes	1020 psig	psig	psig
5 minutes	1020 psig	psig	psig
10 minutes	1020 psig	psig	psig
15 minutes	1020 psig	psig	psig
20 minutes	1020 psig	psig	psig
25 minutes	1020 psig	psig	psig
30 minutes	1020 psig	psig	psig
7 Hours ~~minutes~~	1020 psig	psig	psig
_____ minutes	psig	psig	psig
RESULT	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test ? If Yes, _____ psig.

GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
CHART NO. MC MP-2000-S
METER
CHART PUT ON 7:30 AM
LOCATION 28-05
REMARKS
TAKEN OFF 5:00 PM
START 7:30 AM
CASING PSI 1020
STOP
CASING
PSI 1020
START 7:30 AM
TUBING
PSI 360
STOP
TUBING 5:00 PM
PSI 380
SUNDAY
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
SATURDAY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

SEP 0 3 2013

RECEIVED
SEP 0 6 2013
BY:.....

Ref: 8ENF-UFO

CERTIFIED MAIL 7009-3410-0000-2599-8010
RETURN RECEIPT REQUESTED

Mr. Les Farnsworth, District Supervisor
Petroglyph Operating Company, Inc.
4116 W 3000 S Ioka Lane
P.O. Box 607
Roosevelt, UT 84066

Re: Underground Injection Control (UIC)
Permission to Resume Injection
Ute Tribal 28-05 Well
EPA Well ID # UT20736-07119
API # 43-013-30802
Antelope Creek Oil Field
Duchesne County, UT

Dear Mr. Farnsworth:

On August 26, 2013, the Environmental Protection Agency (EPA) received information from Petroglyph Operating Company, Inc. on the above referenced well concerning the workover and the followup mechanical integrity test (MIT) conducted on August 16, 2013. The data submitted shows that the well passed the required MIT. Therefore, pursuant to Title 40 of the Code of Federal Regulations Section 144.51(q)(2) (40 C.F.R. §144.51(q)(2)), permission to resume injection is granted. Under continuous service, the next MIT will be due on or before August 16, 2018.

Pursuant to 40 C.F.R. §144.52(a)(6), if the well is not used for a period of at least two (2) years ("temporary abandonment"), it shall be plugged and abandoned unless the EPA is notified and procedures are described to the EPA ensuring the well will not endanger underground sources of drinking water ("non-endangerment demonstration") during its continued temporary abandonment. A successful MIT is an acceptable non-endangerment demonstration and would be necessary every two (2) years the well continues in temporary abandonment.

Failure to comply with a UIC Permit, or the UIC regulations found at 40 C.F.R. Parts 144 through 148 constitute one or more violations of the Safe Drinking Water Act, 42 U.S.C. §300h. Such non-compliance may subject you to formal enforcement by the EPA, as codified at 40 C.F.R. Part 22.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
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SEP 0 3 2013

Ref: 8ENF-UFO

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If you have any questions concerning this letter, you may contact Sarah Roberts at (303) 312-7056. Please direct all correspondence to the attention of Sarah Roberts at Mail Code 8ENF-UFO.

Sincerely,

Darcy O'Connor, Director
UIC/FIFRA/OPA Technical Enforcement Programs

cc:

Gordon Howell, Chairman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Ronald Wopsock, Vice-Chairman
Uintah & Ouray Business Committee
P.O. Box 190
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Reannin Tapoof, Executive Assistant
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Phillip Chimburas, Councilman
Uintah & Ouray Business Committee
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Fort Duchesne, Utah 84026

Manuel Myore, Director of Energy, .
Minerals and Air Programs
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

Mike Natchees, Environmental
Coordinator
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

John Rogers
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: 8ENF-UFO CONCURRENCE COPY

CERTIFIED MAIL 7009-3410-0000-2599-8010
RETURN RECEIPT REQUESTED

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Petroglyph Operating Company, Inc.
4116 W 3000 S Ioka Lane
P.O. Box 607
Roosevelt, UT 84066

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8ENF-UFO 8/29/13

JSCHULER 8ENF-UFO 8/29/13

8ENF-UFO 8/

If you have any questions concerning this letter, you may contact Sarah Roberts at (303) 312-7056. Please direct all correspondence to the attention of Sarah Roberts at Mail Code 8ENF-UFO.

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Manuel Myore, Director of Energy, Minerals and Air Programs
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

Mike Natchees, Environmental Coordinator
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

John Rogers
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114

bcc: Randy Brown (8P-TA)

bcc: Randy Brown (8P-TA)

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

SEP - 4 2013

Mr. Les Farnsworth, District Supervisor
Petroglyph Operating Company, Inc.
4116 W 3000 S Ioka Lane
P.O. Box 607
Roosevelt, UT 84066

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Rodrigo Jurado ☐ Agent ☐ Addressee

B. Received by (Printed Name) Rodrigo Jurado C. Date of Delivery 9/6/13

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

ROOSEVELT UT 840 SEP 6 2013 USPS

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7009 3410 0000 2599 8010

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

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Mr. Les Farnsworth, District Supervisor
Petroglyph Operating Company, Inc.
4116 W 3000 S Ioka Lane
P.O. Box 607
Roosevelt, UT 84066

PS Form 3800, August 2006 See Reverse for Instructions

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

AUTHORIZATION FOR ADDITIONAL WELL

UIC Area Permit No: UT20736-00000

The Antelope Creek Waterflood Final UIC Area Permit No. UT20736-00000, effective July 12, 1994, authorizes injection for the purpose of enhanced oil recovery into multiple lenticular sand units which are distributed throughout the lower portion of the Green River Formation. On January 17, 2006 the permittee provided notice to the Director concerning the following additional enhanced recovery injection well:

Well Name:	**Ute Tribal 28-05**
EPA Well ID Number:	**UT20736-07119**
Location:	2583 ft FNL & 712 ft FWL SW NW Sec. 28 - T5S - R3W Antelope Creek Field Duchesne County, Utah

Pursuant to 40 CFR §144.33, Area UIC Permit No. UT20736-00000 authorizes the permittee to construct and operate, convert, or plug and abandon additional enhanced recovery injection wells within the area permit. This well was determined to satisfy additional well criteria required by the permit.

This well is subject to all provisions of UIC Area Permit No. UT20736-00000, as modified and as specified in the Well Specific Requirements detailed below. This Authorization shall expire one year after the Effective Date unless the permittee has converted the well to injection or submits a written request to extend this Authorization prior to the expiration date.

This Authorization is effective upon signature.

Date: JUN 1 2007

Carol L Campbell

Stephen S. Tuber
*Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

** The person holding this title is referred to as the Director throughout the Permit and Authorization*

WELL-SPECIFIC REQUIREMENTS

Well Name: **Ute Tribal 28-05**
EPA Well ID Number: **UT20736-07119**

Prior to commencing injection operations, the permittee shall submit the following information and receive written Authority to Inject from the Director:

1. a successful Part I (Internal) Mechanical Integrity Test (MIT);
2. pore pressure calculation of the proposed injection zone;
3. records for the installation of a cast iron bridge plug at the base of the injection zone; and
4. completed Well Rework Record EPA Form No. 7520-12 and schematic diagram.

Approved Injection Zone: Injection is approved between the base of the Green River A Lime Marker, at approximately 3983 ft $(KB)_{CBL}$, to the top of the Basal Carbonate, at approximately 5975 ft $(KB)_{CBL}$.

Maximum Allowable Injection Pressure (MAIP): The initial MAIP is **1,705 psig,** based on the following calculation:

MAIP = [FG - (0.433)(SG)] * D, where
FG = 0.80 psi/ft SG = 1.009 D = 4708 ft (top perforation depth KB)
MAIP = 1,705 psig

UIC Area Permit No. UT20736-00000 also provides the opportunity for the permittee to request a change of the MAIP based upon results of a step-rate test that demonstrates the formation breakdown pressure will not be exceeded.

Well Construction and Corrective Action: ***The following Corrective Action is required.***
The cement bond log did not provide evidence that an effective barrier exist to prevent significant upward fluid movement through vertical channels adjacent to the injection well bore. Therefore the operator shall demonstrate Part II Mechanical Integrity within one hundred eighty (180) days after commencing injection and at least once every five (5) years thereafter using a temperature survey, noise log, oxygen activation log, or a radioactive tracer survey under certain circumstances.

The permit limits the injection zone to "the gross interval **within the Green River Formation**", which is between the approximate depths of 3983 ft and 5975 ft $(KB)_{CBL}$. Documentation for both procedures shall be submitted to the Director for review before authorization to inject will be permitted.

Tubing: ***No Corrective Action is required.***
2-3/8" or similar size injection tubing is approved; the packer shall be set at a depth no more than 100 ft above the top perforation.

Corrective Action for Wells in Area of Review: ***No Corrective Action is required.***
The following wells that penetrate the confining zone are within or proximate to a 1/4 mile radius around the Ute Tribal No. 28-05. This well was evaluated to determine if any corrective action is necessary to prevent fluid movement into USDWs:

Well: Ute Tribal No. 28-05A	Location:	SW NW	Sec. 28 - T5S - R3W
Well: Ute Tribal No. 28-06	Location:	SE NW	Sec. 28 - T5S - R3W
Well: Ute Tribal No. 28-12	Location:	NW SW	Sec. 28 - T5S - R3W
Well: Ute Tribal No. 29-08	Location:	SE NE	Sec. 29 - T5S - R3W
Well: Ute Tribal No. 29-08A	Location:	SE NE	Sec. 29 - T5S - R3W

Demonstration of Mechanical Integrity: ***The following Corrective Action is required.***
A successful demonstration of Part I (Internal) Mechanical Integrity using a standard Casing-Tubing pressure test is required prior to injection and at least once every five (5) years thereafter. EPA reviewed the cement bond log and was unable to determine if the cement would provide an effective barrier to significant upward movement of fluids through vertical channels adjacent to the well bore pursuant to 40 CFR 146.8 (a)(2). Therefore, further demonstration of Part II (External) Mechanical Integrity is required within one-hundred and eighty (180) days after injection begins and every five (5) years thereafter.

Demonstration of Financial Responsibility: ***No Corrective Action is required.***
The applicant has demonstrated financial responsibility in the amount of $15,000 via a Surety Bond that has been reviewed and approved by the EPA.

Plugging and Abandonment: ***The following Action is required.***
The well shall be plugged in a manner that isolates the injection zone and prevents movement of fluids into or between USDWs. Tubing, packers, and any downhole apparatus shall be removed. Class A, C, G, and H cements, with additives such as accelerators and retarders that control or enhance cement properties, may be used for plugs; however, volume extending additives and gel cements are not approved for plug use. Plug placement shall be verified by tagging after each plug is set. Plugging gel of at least 9.2 lb/gal shall be placed between all plugs. A minimum 50 ft surface plug shall be set inside and outside of the surface casing to seal pathways for fluid migration into the subsurface. Within sixty (60) days after plugging the owner or operator shall submit Plugging Record (EPA Form 7520-13) to the Director. The Plugging Record must be certified as accurate and complete by the person responsible for the plugging operation. At a minimum, the following plugs are required:

PLUG NO. 1: Set a cast iron bridge plug (CIBP) no more than 50 ft above the top perforation (located at 4708 ft (KB)) with a minimum 20 ft cement plug on top of the CIBP.

PLUG NO. 2: Set a minimum 200 ft cement plug inside and backside (unless pre-existing backside cement precludes cement-squeezing this interval) of the 5-1/2" casing across the Trona Zone and the Mahogany Shale, between

approximately 2753 ft (KB) to 2953 ft (KB).

PLUG NO. 3: Set a minimum 200 ft cement plug on the inside and backside (unless pre-existing backside cement precludes cement-squeezing this interval) of the 5-1/2" casing across the Green River , between approximately 1460 ft (KB) to 1660 ft (KB).

PLUG NO. 4: Set a minimum 200 ft cement plug on the inside and backside (unless pre-existing backside cement precludes cement-squeezing this interval) of the 5-1/2" casing across the USDW, between approximately 1174 ft (KB) and 1374 ft (KB).

PLUG NO. 5: Set a minimum 50 ft cement plug on the backside of the 5-1/2" casing, across the surface casing shoe at 283 ft (KB) (unless pre-existing backside cement precludes cement-squeezing this interval.)

PLUG NO. 6: Set a cement plug inside of the 5-1/2" casing, from at least 258 ft (KB) to 308 ft (KB).

PLUG NO. 7: Set a cement plug on the backside of the 5-1/2" casing, from surface to a depth of at least 50 ft.

PLUG NO. 8: Set a cement plug inside of the 5-1/2" casing from surface to a depth of at least 50 ft.

Cut off surface and 5-1/2" casing at least 4 ft below ground level and set P&A marker; submit Sundry Notices and all necessary data as required by the EPA and other regulatory agencies.

Reporting of Noncompliance:

(a) Anticipated Noncompliance. The operator shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(b) Compliance Schedules. Reports of compliance or noncompliance with, or any progress on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than thirty (30) days following each schedule date.

(c) Written Notice of any noncompliance which may endanger health or the environment shall be reported to the Director within five (5) days of the time the operator becomes aware of the noncompliance. The written notice shall contain a description of the noncompliance and its cause; the period of noncompliance including dates and times; if the noncompliance has not been corrected the anticipated time it is expected to continue; and steps taken or planned to prevent or reduce recurrence of the

noncompliance.

Twenty-Four Hour Noncompliance Reporting:

The operator shall report to the Director any noncompliance which may endanger health or environment. Information shall be provided, either orally or by leaving a message, within twenty-four (24) hours from the time the operator becomes aware of the circumstances by telephoning 1.800.227-8917 and asking for the EPA Region 8 UIC Program Compliance and Enforcement Director, or by contacting the Region 8 Emergency Operations Center at 303.293.1788 if calling from outside EPA Region 8. The following information shall be included in the verbal report:

(a) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW.

(b) Any noncompliance with a Permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

Oil Spill and Chemical Release Reporting:

The operator shall comply with all other reporting requirements related to oil spills and chemical releases or other potential impacts to human health or the environment by contacting the **National Response Center (NRC) 1.800.424.8802 or 202.267.2675,** or through the **NRC website at http://www.nrc.uscg.mil/index.htm.**

Other Noncompliance:

The operator shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted.

Other Information:

Where the operator becomes aware that he failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application, or in any report to the Director, the operator shall submit such correct facts or information within two (2) weeks of the time such information became known to him.

WELL-SPECIFIC CONSIDERATIONS

Well Name: **Ute Tribal 28-05**
EPA Well ID Number: **UT20736-07119**

Underground Sources of Drinking Water (USDWs): USDWs in the Antelope Creek Waterflood area generally may occur within the Uinta Formation, which extends from the surface to the top of the Green River Formation at approximately 1560 ft below ground surface. According to *"Base of Moderately Saline Ground Water in the Uinta Basin, Utah, State of Utah Technical Publication No. 92,"* the base of moderately saline ground water may be found at approximately 424 ft below ground surface at this well location. Based on the correlation to the Antelope Creek Ute Tribal 04-03 Type Log the base of the USDW was found to be 1274 ft (KB) in the Ute Tribal 28-05 well.

Confining Zone: The Confining Zone at this location is approximately 205 ft of interbedded limestone and shale between the depths of 3778 ft to 3983 ft (KB) which directly overlies the Injection Zone, based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log. Additional impermeable lacustrine shale beds above the Confining Zone provide for further protection for any overlying USDW.

Injection Zone: The Injection Zone at this well location is an approximately 1992 ft section of multiple lenticular sand units interbedded with shale, marlstone and limestone from the base of the Confining Zone at 3983 ft (KB) to the top of the Basal Carbonate Formation at 5975 ft (KB), based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log.

Well Construction: The cased hole cement bond log shows the top of the continuous casing cement at approximately 3714 ft and shows variable quality of the downhole cement. Therefore, EPA will require demonstration of Part II (External) Mechanical Integrity through the operation life of the well, and has amended the plugging and abandonment plan to include a cement squeeze plug outside of the casing across the base of USDW's at 1274 ft KB.

Surface Casing: 8-5/8" casing is set at 389 ft (KB) in a 12-1/4" hole, using 350 sacks cement circulated to the surface.

Longstring Casing: 5-1/2" casing is set at 6634 ft (KB) in a 7-7/8" 6640 ft total depth hole with a plugged back total depth (PBTD) of 6485 ft, cemented with 224 sacks cement.

Top of Cement: 3714 ft (KB) *cbl*

Perforations: top perforation: **4708 ft** (KB) Bottom perforation: **5750 ft** (KB)

Wells in Area of Review (AOR): Construction and cementing records, including cement bond logs (CBL) as available, for one well in the 1/4 mile AOR that penetrated the confining zone was reviewed and found adequate to prevent fluid movement out of the injection zone and into USDWs.

Well: Ute Tribal No. 28-05A	Casing Cement top: 3230 ft (KB) $_{CBL}$
Well: Ute Tribal No. 28-06	Casing Cement top: 2434 ft (KB) $_{CBL}$
Well: Ute Tribal No. 28-12	Casing Cement top: 2250 ft (KB) $_{CBL}$
Well: Ute Tribal No. 29-08	Casing Cement top: 2750 ft (KB) $_{CBL}$
Well: Ute Tribal No. 29-08A	Casing Cement top: 500 ft (KB) $_{CBL}$